

Claims

1. An apparatus for bending glass panels, said apparatus comprising
- an upper mould carriage track (1) with successive mould carriages (9)
5 whose front or rear wall (11) separates successive heating compartments (2, 3) and several successive bending compartments (4a, 4b) from each other, the mould carriages (9) being adapted for an intermittent conveyance towards a press-bending compartment (4b) having its ceiling provided with a descendable and ascendable male mould (22);
 - 10 - a lower mould carriage track (21) with successive mould carriages (9) whose rear or front wall (11) separates successive cooling compartments (5, 6, 7) from each other, the mould carriages being adapted for an intermittent conveyance in a direction opposite to the conveying direction of the mould carriages present on the upper mould carriage track;
 - 15 - a number of bending moulds (12) supported by the mould carriages (9);
 - preheating compartments (2) present in the upstream end of the upper mould carriage track (1), in which the heating of glass panels is effected by means of forced convection for which thermal energy has been
20 obtained from glass panels presently annealing in downstream end compartments (7) of the lower mould carriage track;
 - radiation heating means (13) on the ceiling of preheating compartments (3) at least in some of the preheating compartments;
 - radiation heating means (14) on the ceiling of gravitationally working bending compartments (4a);
 - 25 - an intermediate floor (15a, 15) which separates the bending compartments (4a) and preheating compartments (3, 3a) from compartments (5, 6) therebelow;
 - a lift mechanism (20) for lowering the mould carriages (9) from the upper track (1) onto the lower track (21) together with bent glass panels;
 - 30 the mould carriages (9) being provided with an open-structured or otherwise highly heat transmissive bottom (10), **characterized** in that the mould

supporting carriage (9) has its bottom fitted with bearer elements (26) and the press-bending compartment (4b) has its lower section fitted with brace elements (27) for the mould carriage (9), which provide bracing for the bearer elements (26) during a press-bending operation performed by means of the male mould (22), and that in connection with the brace elements (27) are provided lifting and lowering mechanisms for the brace elements (27), comprising:

- a frame (28, 29, 30, 31), which has the brace elements (27) arranged in connection therewith and which extends partly beyond the press-bending compartment's (4b) walls;
- power units (32), which are arranged in connection with a frame portion (31) remaining outside the press-bending compartment's (4b) wall and by which the frame (28, 29, 30, 31) is ascendable and descendable.

2. An apparatus as set forth in claim 1, **characterized** in that the lifting and lowering mechanism for the brace elements (27) comprises pneumatic or hydraulic cylinders (32).

3. An apparatus as set forth in claim 1 or 2, **characterized** in that the mould bearer elements (26) comprise flat bars, rods, tubes or other such beam-like elements fitted to the front and rear edges of the mould carriage's (9) open-structured bottom.

4. An apparatus as set forth in any of the preceding claims 1-3, **characterized** in that the frame (28, 29, 30, 31) comprises:

- two elongated girders (28), which are disposed at a distance from each other underneath the bearer elements (26) and whose ends are formed with flanges (29) extending beyond side walls (4c) of the press-bending compartment (4b)
- longitudinal beams (31), each of which is fitted rigidly in a lengthwise direction of the furnace between two successive flanges (29).

5. An apparatus as set forth in any of the preceding claims 1-4, **characterized** in that *in connection with the frame (28, 29, 30, 31) are provided positioning elements (34, 35, 37, 38) for the mould carriage (9).*

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6. An apparatus as set forth in any of claims 1-5, **characterized** in that the press-bending operation is adapted to be at least partially performed by lifting the frame (28, 29, 30, 31).